

WHAT IS CLAIMED IS:

1. A system for exchanging heat with a fluid, for heating the fluid comprising:

a heat exchanger, for exchanging heat with a fluid so as to heat the fluid, adapted to store heat energy, and to enable heat energy to be exchanged with the fluid to heat the fluid, having a channel therein adapted to enable the fluid to flow thereinto and therefrom, and to enable the fluid to be retained therein;

a fluid inlet, for enabling the fluid to flow into the heat exchanger; and

a fluid outlet, for enabling the heated fluid to flow out of the heat exchanger.

2. The system of claim 1, wherein the heat exchanger comprises a storing element for storing heat, and a heating element for heating the storing element.

3. The system of claim 1, wherein the heat exchanger is comprised of aluminum.

4. The system of claim 1, further comprising a sealing element for sealing the heat exchanger.

5. The system of claim 1, wherein the fluid inlet comprises an inlet valve.

6. The system of claim 1, wherein the fluid outlet comprises an outlet valve.

7. The system of claim 1, further comprising a sensing element for sensing the temperature of the heat exchanger, and for controlling and stabilizing the temperature thereof.

8. The system of claim 1, further comprising a system for dispensing the fluid, which includes the heat exchanger therein.

9. The system of claim 1, wherein the heat exchanger is further adapted to retain heat, such that, upon turning off the fluid inlet after dispensing fluid, any fluid remaining in the heat exchanger evaporates through the fluid outlet responsive thereto.

10. The system of claim 1, further comprising a flow-controlling element for controlling the flow of the fluid from the fluid outlet for dispensing thereof.

11. The system of claim 1, further comprising an operation-controlling element for controlling the operation of the system.

12. The system of claim 2, wherein the storing element is adapted to enable the fluid to be in direct contact therewith.

13. The system of claim 2, wherein the storing element is further adapted to maintain the fluid at a heated fluid temperature, and to enable the fluid to be heated thereabove substantially rapidly to a fluid dispensing temperature.

14. The system of claim 2, wherein the heating element is generally m-shaped.

15. The system of claim 2, wherein the heating element is adapted to be connected to a heating source.

16. The system of claim 2, wherein the channel is generally spiral-shaped.

17. The system of claim 8, wherein the heat exchanger is located generally in the upper portion of the fluid dispensing system.

18. The system of claim 8, wherein the fluid dispensing system further includes an outlet for dispensing the heated fluid.

19. The system of claim 10, wherein the flow-controlling element comprises a flowmeter.

20. The system of claim 11, wherein the operation-controlling element comprises a processing element for processing the temperature of the heat exchanger.

21. The system of claim 18, wherein the fluid dispensing outlet comprises a fluid spray head.

22. The system of claim 20, wherein the processing element comprises a microprocessor.

23. A system for exchanging heat with a fluid, for heating the fluid comprising:

a heat exchanger, for exchanging heat with a fluid so as to heat the fluid, adapted to store heat energy, and to enable heat energy to be exchanged with the fluid to heat the fluid, having a channel therein adapted to enable the fluid to flow thereinto and therefrom, and to enable the fluid to be retained therein;

a fluid inlet, for enabling the fluid to flow into the heat exchanger; and

a fluid outlet, for enabling the heated fluid to flow out of the heat exchanger;

wherein the heat exchanger is further adapted to retain heat, such that, upon turning off the fluid inlet after dispensing fluid, any fluid remaining in the heat exchanger evaporates through the fluid outlet responsive thereto.

25. A system for exchanging heat with a fluid, for heating the fluid comprising:

a heat exchanger, for exchanging heat with a fluid so as to heat the fluid, adapted to store heat energy, and to enable heat energy to be exchanged with the fluid to heat the fluid, having a channel therein adapted to enable the fluid to flow thereinto and therefrom, and to enable the fluid to be retained therein, wherein the heat exchanger comprises a storing element for storing heat, and a heating element for heating the storing element, and the heating element is generally m-shaped;

a fluid inlet, for enabling the fluid to flow into the heat exchanger; and
a fluid outlet, for enabling the heated fluid to flow out of the heat exchanger.

26. A system for exchanging heat with a fluid, for heating the fluid, comprising:

a heat exchanger, for exchanging heat with a fluid so as to heat the fluid, adapted to store heat energy, and to enable heat energy to be exchanged with the fluid to heat the fluid, having a channel therein adapted to enable the fluid to flow thereinto and therefrom, and to enable the fluid to be retained therein, wherein the heat exchanger has a channel therein adapted to enable the fluid to flow thereinto and therefrom, and to enable the fluid to be retained therein, and the channel is generally spiral-shaped;

a fluid inlet, for enabling the fluid to flow into the heat exchanger; and
a fluid outlet, for enabling the heated fluid to flow out of the heat exchanger.

27. A system for exchanging heat with a fluid, for heating the fluid, comprising:

means for exchanging heat with a fluid so as to heat the fluid, adapted to store heat energy, and to enable heat energy to be exchanged with the fluid to heat the fluid, having a channel therein adapted to enable the fluid to flow thereinto and therefrom, and to enable the fluid to be retained therein;

a fluid inlet, for enabling the fluid to flow into the heat exchanging means;
and

10 a fluid outlet, for enabling the heated fluid to flow out of the heat exchanging means.

28. The system of claim 27, wherein the heat exchanging means are further adapted to retain heat, such that, upon turning off the fluid inlet after dispensing fluid, any fluid remaining in the heat exchanging means evaporates through the fluid outlet responsive thereto.

29. The system of claim 27, wherein the heat exchanging means comprise a storing element for storing heating, and a heating element for heating the storing element, and the heating element is generally m-shaped.

30. The system of claim 27, wherein the heat exchanging means have a channel therein adapted to enable the fluid to flow thereinto and therefrom, and to enable the fluid to be retained therein, and the channel is generally spiral-shaped.

31. A method of exchanging heat with a fluid, for heating the fluid, in a system which comprises a heat exchanger, for exchanging heat with a fluid so as to heat the fluid, adapted to store heat energy, and to enable heat energy to be exchanged with the fluid to heat the fluid, having a channel therein adapted to
5 enable the fluid to flow thereinto and therefrom, and to enable the fluid to be retained therein, a fluid inlet, for enabling the fluid to flow into the heat exchanger, and a fluid outlet, for enabling the heated fluid to flow out of the heat exchanger, wherein the method comprises:

enabling fluid to flow through the fluid inlet into the heat exchanger;
10 exchanging heat with the fluid in the heat exchanger so as to heat the fluid and store heat energy; and

enabling heated fluid to flow out of the heat exchanger and through the fluid outlet.

32. The method of claim 31, wherein the heat exchanger comprises a storing element for storing heat, and a heating element for heating the storing element, and wherein exchanging heat comprises heating the storing element and storing heat.

33. The method of claim 31, wherein the heat exchanger is comprised of aluminum, and wherein exchanging heat comprises exchanging heat with the fluid in the aluminum heat exchanging means.

34. The method of claim 31, further comprising a sealing element for sealing the heat exchanger, further comprising sealing the heat exchanger.

35. The method of claim 31, wherein the fluid inlet comprises an inlet valve, and wherein enabling fluid inlet flow comprises enabling the fluid to flow through the inlet valve.

36. The method of claim 31, wherein the fluid outlet flow comprises an outlet valve, and wherein enabling fluid outlet flow comprises enabling the fluid to flow through the outlet valve.

37. The method of claim 31, further comprising a sensing element for sensing the temperature of the heat exchanger and for controlling and stabilizing the temperature thereof, further comprising sensing the temperature of the heat exchanger and controlling and stabilizing the temperature thereof.

38. The method of claim 31, further comprising a system for dispensing the fluid, which includes the heat exchanger therein, further comprising dispensing the fluid from the fluid dispensing system.

39. The method of claim 31, wherein the heat exchanger is further adapted to retain heat, such that, upon turning off the fluid inlet after dispensing fluid, any fluid remaining in the heat exchanger evaporates through the fluid outlet responsive thereto, further comprising evaporating any fluid remaining in the heat exchanger, after dispensing fluid, responsive to the retained heat in the heat exchanger.

40. The method of claim 31, further comprising a flow-controlling element for controlling the flow of the fluid from the fluid outlet for dispensing thereof, further comprising controlling the flow of the fluid from the fluid outlet for dispensing thereof.

41. The method of claim 31, further comprising an operation-controlling element for controlling the operation of the system, further comprising controlling the operation of the system.

42. The method of claim 32, wherein the storing element is adapted to enable the fluid to be in direct contact therewith, and wherein exchanging heat comprises enabling fluid to be in direct contact with the storing element.

43. The method of claim 32, wherein the storing element is further adapted to maintain the fluid at a heated fluid temperature, and to enable the fluid to be heated thereabove substantially rapidly to a fluid dispensing temperature, and wherein exchanging heat comprises maintaining the fluid at a heated fluid temperature and enabling the fluid to be substantially rapidly heated thereabove to a fluid dispensing temperature.

44. The method of claim 32, wherein the heating element is generally m-shaped, and wherein exchanging heat further comprises heating the storing element through the generally m-shaped heating element.

45. The method of claim 32, wherein the heating element is adapted to be connected to a power source, and wherein exchanging heat further comprises heating the heating element upon actuating the power source.

46. The method of claim 33, wherein the channel is generally spiral-shaped, and wherein exchanging heat further comprises enabling fluid to flow into the generally spiral-shaped channel.

47. The method of claim 38, wherein the heat exchanger is located generally in the upper portion of the fluid dispensing system, and wherein exchanging heat further comprises exchanging heat in the generally upper portion of the fluid dispensing system.

48. The method of claim 38, wherein the fluid dispensing system further includes an outlet for dispensing the heated fluid, and wherein dispensing further comprises dispensing the fluid from the heated fluid dispensing outlet.

49. The method of claim 40, wherein the flow-controlling element comprises a flowmeter, and wherein controlling further comprises controlling the flow of the fluid in the flowmeter.

50. The method of claim 41, wherein the operation-controlling element comprises a processing element for processing the temperature of the heat exchanger, and wherein operation-controlling further comprises processing the temperature of the heat exchanger.

51. The method of claim 47, wherein the fluid dispensing outlet comprises a fluid spray head, and wherein dispensing further comprises dispensing through the fluid spray head.

52. The method of claim 50, wherein the processing element comprises a microprocessor, and wherein sensing further comprises processing through a microprocessor.

53. A method of exchanging heat with a fluid, for heating the fluid, in a system which comprises a heat exchanger, for exchanging heat with a fluid so as to heat the fluid, adapted to store heat energy, and to enable heat energy to be exchanged with the fluid to heat the fluid, having a channel therein adapted to enable the fluid to flow thereinto and therefrom, and to enable the fluid to be retained therein, a fluid inlet, for enabling the fluid to flow into the heat exchanger, and a fluid outlet, for enabling the heated fluid to flow out of the heat exchanger, wherein the heat exchanger is further adapted to retain heat, such that, upon turning off the fluid inlet, after dispensing fluid, any fluid remaining in the heat exchanger evaporates through the fluid outlet responsive thereto, and wherein the method comprises:

enabling fluid to flow through the fluid inlet into the heat exchanger;

exchanging heat with the fluid in the heat exchanger so as to heat the fluid and store heat energy;

enabling heated fluid to flow out of the heat exchanger and through the fluid outlet;

turning off the fluid inlet;

dispensing fluid; and

evaporating any fluid remaining in the heat exchanger through the fluid

outlet, responsive to the retained heat in the heat exchanger.

54. A method of exchanging heat with a fluid, for heating the fluid, in a system which comprises a heat exchanger, for exchanging heat with a fluid so as to heat the fluid, adapted to store heat energy, and to enable heat energy to be exchanged with the fluid to heat the fluid, having a channel therein adapted to enable the fluid to flow thereinto and therefrom, and to enable the fluid to be retained therein, wherein the heat exchanger comprises a storing element for storing heat, and a heating element for heating the storing element, which is generally m-shaped, a fluid inlet, for enabling the fluid to flow into the heat exchanger, and a fluid outlet, for enabling the heated fluid to flow out of the heat exchanger, wherein the method comprises:

enabling fluid to flow through the fluid inlet into the heat exchanger;
exchanging heat with the fluid through the generally m-shaped heating element in the heat exchanger, so as to heat the fluid and store heat energy; and
enabling heated fluid to flow out of the heat exchanger and through the fluid outlet.

55. A method of exchanging heat with a fluid, for heating the fluid, in a system which comprises a heat exchanger, for exchanging heat with a fluid so as to heat the fluid, adapted to store heat energy, and to enable heat energy to be exchanged with the fluid to heat the fluid, having a channel therein adapted to enable the fluid to flow thereinto and therefrom, and to enable the fluid to be retained therein, wherein the channel is generally spiral-shaped, a fluid inlet, for enabling the fluid to flow into the heat exchanger, and a fluid outlet, for enabling the heated fluid to flow out of the heat exchanger, wherein the method comprises:

enabling fluid to flow through the fluid inlet into the generally spiral-shaped channel in the heat exchanger;
exchanging heat with the fluid in the generally spiral channel in the heat exchanger so as to heat the fluid and store heat energy; and
enabling heated fluid to flow out of the generally spiral-shaped channel in the heat exchanger and through the fluid outlet.

56. A method of exchanging heat with a fluid, for heating the fluid, in a system which comprises means for exchanging heat with a fluid so as to heat the fluid, adapted to store heat energy, and to enable heat energy to be exchanged with the fluid to heat the fluid, having a channel therein adapted to enable the fluid to flow thereinto and therefrom, and to enable the fluid to be retained therein, a fluid inlet, for enabling the fluid to flow into the heat exchanging means, and a fluid outlet, for enabling the heated fluid to flow out of the heat exchanging means, wherein the method comprises:

enabling fluid to flow through the fluid inlet into the heat exchanging means;

exchanging heat with the fluid in the heat exchanging means so as to heat the fluid and store heat energy; and

enabling heated fluid to flow out of the heat exchanging means and through the fluid outlet.

57. The method of claim 56, wherein the heat exchanger is further adapted to retain heat, such that, upon turning off the fluid inlet after dispensing fluid, any fluid remaining in the heat exchanging means evaporates through the fluid outlet responsive thereto, further comprising evaporating any fluid remaining in the heat exchanging means, after dispensing of the fluid, responsive to the retained heat in the heat exchanging means.

58. The method of claim 56, wherein the heat exchanging means comprise means for storing heat, and means for heating the storing means, and the heating means are generally m-shaped, and wherein exchanging heat comprises heating the storing means through the generally m-shaped heating means and storing heat in the storing means.

59. The method of claim 56, wherein the heat exchanging means have a channel therein adapted to enable the fluid to flow thereinto and therefrom, and to enable the fluid to be retained therein, and the channel is generally spiral-

shaped, and wherein exchanging heat comprises enabling fluid to flow into the
5 generally spiral-shaped channel in the heat exchanging means and enabling fluid
to be retained in the heat exchanging means.

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